Contribution ID: **47**   Type: **Oral Presentation**

Context-aware cloud computing for HEP applications

Wednesday, 16 March 2016 16:20 (20 minutes)

Context-aware computing is a topical area for the multimedia or content-delivery industry. In this model, one uses situational and environmental information to anticipate needs and proactively offer situation-aware content, functions and experiences. We believe scientific computing can significantly benefit from a context-aware design. Currently we operate a distributed cloud computing system that is using thousands of cores on private and commercial clouds for HEP applications as well as applications in astronomy. We will describe this system, which has been running successfully for a number of years, highlighting the reliability and scalability, but also noting the challenges. To address these challenges, we have realized that we need systems with the ability to self-configure, retrieve software, locate data, self-diagnose faults and automatically recover from well-known errors situations. We are adding intelligence to the VM instances so that they can dynamically configure themselves and locate repositories. We will describe some of the steps we have made toward a context-aware cloud system and described the new features and services that will be deployed over the next year. The new system will make more efficient use of our existing resources and enable us to run all applications (e.g. compute, data and memory-intensive) on both private and opportunistic clouds. We also recognize the importance of developing software and system for a broader community. We have used and will continue to use and develop open-source packages with common standard protocols so that our context-aware cloud computing system can be used by any research discipline.

Primary author: Dr SOBIE, Randall (University of Victoria)

Presenter: Dr SOBIE, Randall (University of Victoria)

Session Classification: Infrastructure Clouds and Virtualisation Session I

Track Classification: Infrastructure Clouds and Virtualisation